THE Agricultural Situation

AUGUST 1953

Volume 37 **Number 8**

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[The Agricultural Situation is sent free to crop, livestock, and price reporters in connection with their reporting work]

A monthly publication of the Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C. The printing of this publication has been approved by the Director of the Budget (January 18, 1952). Single copy 5 cents, subscription price 50 cents a year, foreign 70 cents, payable in cash or money order to the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

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A Letter to Crop & Livestock Reporters

I LIKE TO PAINT. It's good to see an old dirty looking house take on such a nice, new gleaming front—all slick and smooth. But the hard work on a paint job is the part that doesn't show at first; that is, if you are really going to do a job that will stand the test of time.

Last Sunday we went over to a friend's house and, while the ladies talked about *whatever ladies talk about,* friend Bill and I went out in the yard and looked over the paint job Bill had done last year. It still looked fairly good, except in spots where some nail-heads were beginning to show through, and some places where it was beginning to peel.

Bill was pretty much disgusted because he said he had used the best paint he could get. Cost him six-and-a-half bucks a gallon, and look at it—just not standing up at all.

Now I am just pretty certain the trouble wasn't with the paint, but with the preparation; because I saw that house 2 years ago and we discussed how much of the old paint would have to come off if the new job was going to look like anything, and stand up. Well, it was going to be a big and dirty job, and I suppose I would have shied away from it too. But just the same, Bill has wasted several gallons of good paint and a lot of time; because I just know a lot more of that paint is going to come off before another season rolls around. Beauty, sure enough, is only skin deep, unless you do something about it.

This same principle applies to a lot of things. Take a nice looking crop for one example. The average person can't see all the time put into preparing the land, the care taken in seasons gone by in turning under cover crops, the fertilizer under the crop, and a dozen other things you have done. But a fellow who knows can tell there is a lot more there than meets the eye.

Now what's all this got to do with crop reports? Only this—there is a lot more behind a crop report than most people realize. Whoever looked at one of these reports and saw individual reports from thousands of farmers all over the country?

Whoever saw in a figure the work of the State Statistician's office in sending out the schedule, adding up the returns, comparing and interpreting the returns, in light of all the figures for 15—20—30, even 90 years before?

Can you see "us guys" . . . here in the early hours of the morning and all through a stuffy August day, in a hot office with the doors locked and the blinds sealed, putting those State reports together? Do all of the thousands of people who use that report, to guide them in marketing their crops or planning their next year's operations, see all of these things? I'll bet they don't. Yet, this is only a part of the whole story. We, you, and all the rest of us have been cultivating this field for a long time, nearly 100 years. A lot of work has been spent on the seed-bed. We have worked carefully and put out a report, but it's the things that don't show, all of this background and preparation—things that don't show—that really count.

S. R. Newell, Chairman
Crop Reporting Board, BAE

Outlook Highlights

. . . AUGUST 1953

DOMESTIC demand for food and other farm products continues high, but foreign demand for our farm products remains at the reduced level of last year. Prices farmers get will depend to a large extent on the final outturn of this year's crops. Government support also will play an important part.

Prices of most nonfarm products including industrial commodities purchased by farmers, have remained fairly firm, reflecting the high level of economic activity and a strong demand for most goods and services.

Farm Income

Cash receipts of farmers from sales of products in the first half of 1953

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Wheat Referendum Friday, August 14

FRIDAY, August 14, is the day wheat farmers will vote for or against marketing quotas for the 1954 crop. This date was set by the Secretary of Agriculture on July 15, when he announced a national acreage allotment of 62 million acres for the 1954 wheat crop. The Secretary had announced on July 1 that a quota referendum would be held.

If at least two-thirds of the growers voting approve of wheat quotas, quotas will be put into effect for the 1954 wheat crop. If over one-third of those voting do not approve, quotas will not be used. In general, growers with more than 15 acres planted to wheat, and with normal production of 200 bushels or more, are subject to the quotas and are therefore eligible to vote in the referendum. If the referendum carries, the quantity of wheat a farmer can market without penalty will be limited to what he can grow on his allotted acreage. Acreage allotments will be in effect for the 1954 crop, whether or not quotas are approved, since the allotments are required by law. But if the referendum does not carry and the marketing quotas are not put into effect, price supports to cooperating farmers will be only 50 percent of parity instead of 90 percent.

Here, in brief, are the issues at stake in the August 14 referendum:

IF THE VOTE IS YES—

1. Marketing quotas will be in effect for all farms planting more than 15 acres of wheat.
2. Marketing penalties equal to 45 percent of the wheat parity as of May 1, 1954, will apply on any wheat produced on acres in excess of the farm's allotment. (The parity price on May 15, 1953, was $2.43.)
3. Price support at 90 percent of parity will be available for those who stay within their acreage allotment.
4. Quotas can be expected to hold down production, helping to bring supplies more nearly in line with the effective market demand.

IF THE VOTE IS NO—

1. There will be no marketing quotas with their penalty controls.
2. Acreage allotments, however, will continue in effect.
3. Price supports will drop to 50 percent of parity for cooperators. Noncooperators—any who exceed their acreage allotments—will not be entitled to price support, even at the 50 percent level. (If price supports drop to 50 percent of parity it might mean that the National average support level would be between $1.15 and $1.20 for the 1954 crop, compared with $2.21 per bushel announced for the 1953 crop. Market prices, however, would not be expected to average this low, since wheat would come into competition with corn on a feed grain basis at close to corn prices, wheat and corn being about equal in feeding value on a pound-for-pound basis.)

WHETHER OR NOT MARKETING QUOTAS ARE *APPROVED FOR THE 1954 CROP*, prices for *the 1953 crop* will be supported by loans and purchase agreements at a national average to farmers of $2.21 per bushel. The equivalent at Kansas City is $2.49 for No. 2 Hard Winter, and at Minneapolis $2.52 for No. 1 Dark Northern Spring.

By Congressional Action

The announcement of the quota referendum followed Congressional action which set a new minimum national acreage allotment figure, and allowed the referendum to be held as late as mid-August. Under the revised law, the national allotment for 1954 may not be less than 62 million acres. Since the indicated 1953–54 wheat supply stands at an all-time high, the minimum acreage—62 million—is called for. Under the previous legislation, the national allotment for 1954 would have been only 55 million acres. (The 1953 planted acreage was 78.6 million.)

The national acreage allotment is apportioned among the States, the State allotments among the counties, and the county allotments among individual farms. In general, all farms which grew wheat in any one of the years 1951, 1952, or 1953 will be assigned an acreage allotment. Then, if marketing quotas are approved, the individual farm marketing quota is the wheat actually produced on the allotted acres.

On July 1, when the Secretary of Agriculture proclaimed wheat quotas,

(*Continued on page 13*)

Changes in the Production of Potatoes

BIG CHANGES have taken place in potato production during the last 20 years. Acreage has been greatly reduced while yields per acre have more than doubled. There have been significant shifts in the location of production. Most of the acreage has become concentrated onto fewer farms in a number of relatively small areas. And the crop has disappeared from many farms where a small acreage of potatoes formerly was a regular part of the cropping pattern.

Until about 1910, the acreage of potatoes was generally increasing in this country. Then followed a period of about 20 years when the level of acreage was fairly constant. During this period the crop was widely grown throughout the Northeastern and North Central States, and this constituted the principal region of production.

Acreage Smaller, Yields Double, Consumption Lower

About 1935 the national acreage of potatoes began to decline, and this decline was especially sharp following 1943. The total acreage in 1951 was only half that of 1945, or down to almost a third of the acreage in 1934. Only in the last 2 years have acreages shown any increase since 1943, and these have been relatively small.

But yields per acre have more than doubled during the last 20 years, and most of the increase has come in the last 10 years. Average yield for the 5 years, 1948–52, was 240 bushels per acre, compared with 111 bushels in 1928–32. The rise in yields has had the effect of maintaining, and even increasing somewhat, the level of potato production . . . in spite of the decline in acreage since the midthirties.

Per capita consumption of potatoes has declined rather steadily since about 1910. The average quantity used per person was only 106 pounds a year in 1948–52, compared with about 175 pounds in 1910–14. The decline in average consumption per person has almost entirely offset the effect of population growth on the total demand for potatoes. The decrease in use of potatoes, like the decrease in consumption of bread and other cereal products, has resulted from a gradual shift to more fresh and canned vegetables, fruits, and dairy products in the average American diet. Not only have people come to demand a greater variety of foods, but the average size of meals has been reduced as a result of lessened physical exertion required of many workers, due to the substitution of power and machinery for much manual labor in both town and country.

Other factors that have affected the average national diet include the decline in number of people living on farms and the emphasis on *slimness* of the feminine figure.

People Eat But Little More When Crop Is Large

Apart from the downward trend in consumption per capita, the demand for potatoes has been quite inelastic. This contributes to severe declines in market prices in years when the crop is unusually large and to high prices (such as in the spring of 1952) following crops that are relatively short. For several years during the 1940's, prices were supported by the Government. With the end of price supports in most of the producing areas in 1950 there was a sharp drop in the national average price per bushel. Prices rose in 1951 and 1952 with the reduced production of those years, but declined again as supplies became large in 1953.

A succession of years of relatively low prices for potatoes in the 1930's was an important factor in bringing about the marked decline in acreage of this crop. In the 1940's, shortage of labor was a contributing factor. Growers with relatively high costs of production per bushel and with more attractive alternative enterprises were the first to discontinue producing potatoes for market. The number of growers declined from 3.1 million in 1934 to 2.1 million in 1944. By 1949 the number had been reduced to 1.6 million. Po-

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Farm Output Indicated About the Same as Last Year

THE TOTAL VOLUME of farm output this year will be about as large as last year's record, based on July 1 indications.

Farm output is expected to be 2 percent above the 1948–52 average and 43 percent greater than in 1935–39. An all-time high annual production of livestock and livestock products seems likely. Total crop production promises to be less than 2 percent below 1952, and one of the largest of record. A further decrease in the number of farm horses and mules will mean that more of the feed-crop production will be available for producing meat, milk, and eggs.

The above expectations are based primarily on crop prospects as indicated in the July Crop Report. Changes in weather conditions during the rest of the year could result in a raising or lowering of the volume of output indicated at this time. During the rest of the crop season, revised estimates of the volume of farm output will be made by the Bureau of Agricultural Economics each month, after the release of the general crop report.

Drought conditions in a large portion of the central and southern Great Plains area have seriously affected production prospects for both crops and livestock in the Plains. This situation is creating hardships for many farmers in that area. However, crops in most of the country are good to excellent. Consequently, total farm production prospects have not been seriously affected by the drought conditions.

Only on rare occasions do widespread droughts, such as those of 1934 and 1936, greatly reduce our annual volume of output. Continuation of the wartime and postwar trends in farm technology lend assurance that our highly diversified and widespread agriculture will continue to provide United States consumers with ample supplies of food, fiber, and tobacco.

Glen T. Barton
Bureau of Agricultural Economics

United States Farm Production, Indicated 1953

With Comparisons—— Index Numbers, 1935–39=100

Item	1935–39	1948–52	1952	Indicated 1953 [1]
Total farm output	**100**	**140**	**144**	**143**
Food livestock production [2]	*100*	*140*	*148*	*149*
Crop production [3]	*100*	*133*	*134*	*132*
Farm-produced power [4]	*100*	*50*	*41*	*37*

[1] Indications for 1953 based chiefly on July 1953 report of the Crop Reporting Board.
[2] Dairy products, poultry products, meat animals, wool, and mohair.
[3] All crop production including production of feed for horses and mules.
[4] Not included in total farm output. Production of farm-produced power includes the feed and pasture consumed by horses and mules, and the product added in converting this feed and pasture into animal power.

Supplemental Irrigation In Our Humid Eastern States

IN LATE summer, when extended dry periods occur in many sections of the otherwise humid eastern States, many farmers begin to think about getting ready for supplemental irrigation. They see other operators making successful use of irrigation. Dairy pasture grazing capacities are maintained and yields of feed and cash crops are held at high levels instead of being seriously reduced.

Can the average farmer afford to install an irrigation system in areas where, in most years, natural rainfall will produce acceptable yields?

If supplemental irrigation were needed every year, the answer without doubt would be "yes." But when we get by without any damaging droughts so much of the time, will the installation be a wise one? The modern aluminum-tubing sprinkler systems are expensive. Then, to provide the water supply may require another big outlay of funds. Drilling wells costs money. So does building a farm-storage pond. You have to have one or the other, unless your farm has a natural lake or a year-round stream.

Despite the recognized gamble, eastern farmers in steadily increasing numbers are installing supplemental irrigation systems. In the January 1950 issue of THE AGRICULTURAL SITUATION, we estimated that irrigation in the East had probably reached 1½ million acres with about a million acres of it in rice. The 1950 Census data, now available, records a total irrigated acreage in these eastern States of 1,517,000. Of this total, 998,000 acres were in rice, in Arkansas and Louisiana.

The acreage under irrigation in the humid States had doubled in the 10-year period from 1939 to 1949. But the acreage is still not large when compared with the total land in crops and pastures. This means that farmers are adopting irrigation gradually and with caution, especially in view of the large acreage that could be irrigated. It seems clear that eastern farmers are not jumping into supplemental irrigation with any idea of a bonanza, or that it is a get-rich-quick proposition.

However, the number of requests to the soil conservation districts for technical assistance in connection with installing supplemental irrigation systems has been heavy in recent years. In 29 humid States (that is, excluding Arkansas and Louisiana) technical assistance had been given in connection with improved water application on nearly 200,000 acres through 1952. Help was given on about 130,000 acres in the 3 years, 1950–52 (40,000 acres in 1952, 30,000 acres in 1951, and 60,000 acres in 1950). To get land ready for irrigation alone, technical aid has been supplied by the *Soil Conservation Service* on a total of over 100,000 acres in these 29 eastern States.

Other Indications of Expansion

Surveys carried out by the Michigan Agricultural Experiment Station show that the present capacity of sprinkler systems in that State is several times the 14,000 acres under irrigation as reported by the 1950 Census. A survey in New York in 1952 covering 50 of the State's 62 counties discloses a total of 1,570 farms irrigating 45,800 acres. In 1949 the Census reported 888 farms in New York with irrigation systems that were used to irrigate 19,248 acres.

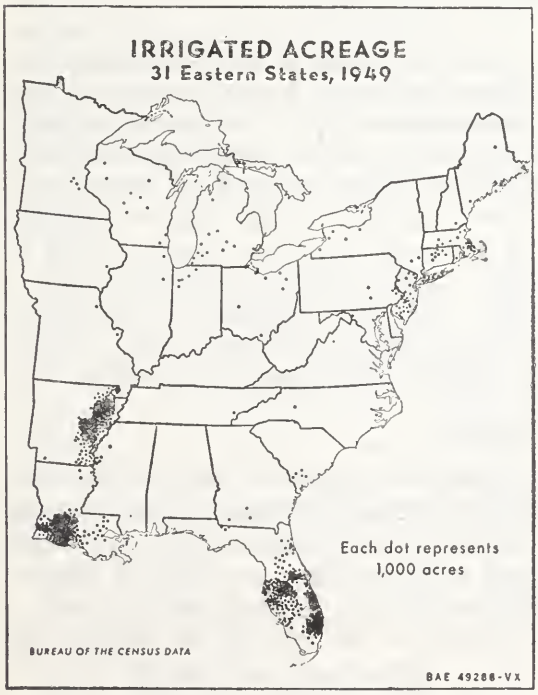
Aluminum sales for portable sprinkler systems which are the principal means of applying water in the East, except in Florida and in rice areas, are now nearly four times the annual rate of sales prior to 1949 for the country as a whole. The East, of course, has shared in this increased installation of aluminum systems.

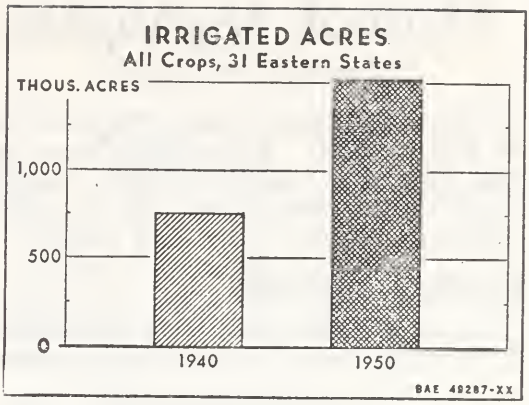
These few spot indications are not enough to base an estimate of total irrigation today but they indicate that expansion has continued at a somewhat accelerated rate. In the 4 years *since the 1949 Census,* these reports

indicate that irrigation for crops, other than rice, probably has increased by more than 200,000 acres.

Humid area irrigation is scattered and, except in the rice areas, is not especially concentrated as it is in the irrigated valleys in the West. Because it is practiced by widely separated farm operators, it has been difficult for the Census to obtain a complete enumeration. Irrigation is practiced by farmers in many of the counties in the Eastern States where we have none reported by the Census. It is therefore taken for granted that the Census data fail to reveal the full extent of supplemental irrigation. Moreover, since the last Census report in 1949, reports indicate a stepped-up expansion.

Supplemental irrigation, though often to a very minor extent, was reported by the Census in 828 of the 2,011 counties in the 31 Eastern States. Irrigation is practiced by at least a few farmers in nearly every county in Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Delaware, and Florida. Irrigation is reported in most parts of Michigan, Pennsylvania, and Wisconsin. Heavy concentration of irrigated acreage in the East, however, is found in only a limited number of places (*see map*). Besides the rice areas of Arkansas, Louisiana, and Mississippi, large acreages are irrigated in





many sections of Florida, in the vicinity of Colleton County, S. C., Bucks County, Pa., Long Island, N. Y., Hartford County, Conn., and Plymouth County, Mass.

Although the Census has reported little supplemental irrigation in the central States, especially in the Corn Belt, it is very likely that we may see a considerable development in this area in the years ahead. Results being obtained by progressive farmers seem to indicate great potentialities for this area. Also, the few experimental results show that substantial increases in yields can be obtained by irrigation. Even 10-day to 2-week drought periods in this area cause reductions in yields, especially if such droughts occur during the critical growing periods such as the period between tasseling and silking in corn growth. The irrigation of hay crops like ladino clover and pasture in these areas seems to show considerable promise.

In considering humid-area irrigation, its distinctive nature and contrast with western irrigation might well be noted. In the arid West, irrigation is actually a "must" for the production of the kind of crops produced under irrigation. By irrigation a new agriculture was brought to the valleys in the West. In the East, supplemental irrigation is practiced with a view to improving the kind of production already underway—as a safeguard against damaging droughts, to increase yields, to obtain higher quality products, to get earlier maturity, to maintain grazing capacities of pasture especially in late summer and fall, and to get better response out of fertilizer applications.

Extensive use is made of sprinklers in the humid States for supplemental

Outlook Highlights

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dropped 5 percent from a year earlier to $12.6 billion. Marketings were up but prices averaged a tenth lower. Most of the decline was in livestock products, mainly cattle and calves.

Livestock and Meat

Prices of beef cattle have risen from their June lows. Prices of top grades are expected to stay at a higher level than in recent months. Number of cattle and calves on feed July 1 was up only 4 to 5 percent from a year earlier. Some fluctuation but no particular trend is expected for prices of lower grade cattle the rest of 1953.

The seasonal decline in hog prices probably will begin late in the summer. Prices have risen steadily so far this year.

A seasonal decline in prices of sheep and lambs is expected this fall as slaughter picks up. However, rise in slaughter probably won't be as great as last fall. It has been running about 15 percent above a year earlier so far in 1953 as spring lambs were marketed earlier and numbers of sheep and lambs on farms were reduced.

Dairy Products

The milk flow in June showed a smaller increase over a year earlier than in any other month so far this year. Partly responsible was the deterioration of pastures.

About the same amount of fluid milk and cream is being consumed per person as a year ago. With milk output up, the increase is going into butter, powder and cheese, products being bought by the Government for price support.

Fats and Oils

The decline in output of food fats expected this year probably will be offset by record carryover. Supplies for 1953–54 probably will be about the same as in 1952–53. Exports of food fats in the first 5 months of this year were down 40 percent from the same period of 1952. About half of the drop was in lard. Smaller supplies in other exporting areas may lead to some increase in exports the latter part of 1953.

Feeds

Mid-year prospects indicate that the supply of feed concentrates for 1953–54 will be 6 percent above this year and only slightly below the 1950–51 record. The corn supply—crop plus carryover—is likely to be largest on record. If

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irrigation. In these States over 75 percent of all irrigation farmers make use of *sprinklers*. Rice irrigation, of course, is by *flooding*. Some of the vegetable irrigation in Florida and North Carolina is by *subsurface* irrigation. Most of the irrigation of citrus is by the *furrow* method. The irrigation in Iowa is of the *gravity type* where thus far the practice has been limited pretty much to sweet corn. Some of the irrigation in Michigan is by *subsurface* irrigation. Other than these few indicated exceptions, *future expansion of supplemental irrigation in the East will undoubtedly be largely of the sprinkler type.*

As irrigation expands in the East, problems are arising in connection with the rights to the use of water from flowing streams, natural lakes, and, to some extent, underground sources. The increasing use of water in the humid States by cities and industry, as well as by agriculture, is bringing the problem of water rights in these States to the front. In the eastern States established uses are not protected under existing laws to the same extent as they are in the western States under the laws of prior appropriation. A farmer who installs a system to draw water from a flowing stream has no assurance that later on other farmers above him will not install systems and so deplete the stream flow that not enough water is left to meet his needs. A means of providing greater protection to established uses of water is sorely needed. Groups are active in a number of States in studying the problem of water rights, notably in South Carolina, Michigan, New York, and Pennsylvania.

Elco L. Greenshields
Bureau of Agricultural Economics

Cutting Costs by Feeding More Forage

FARMERS in many parts of the country are finding that more forage and less grain in the livestock ration bring lower costs. And that is not all it does. It saves manpower and scarce materials. Because of these savings more feed can be produced and thus more livestock can be fed. This increases returns from livestock farming or dairying still further.

The Bureau of Agricultural Economics, in cooperation with State agricultural experiment stations, has made several studies of the effects of substituting forage for grain in feeding livestock.

Some of the Findings

In the *Corn Belt* many farms that grow much high-quality forage have higher incomes than similar farms that produce little good forage. This is why. The grass and legumes in the rotation increase yields of grain crops and the extra grain brings extra money. The greater acreages of grass and legumes also permit farmers to feed more roughage-eating animals. These extra animals also bring extra returns.

But substituting forage for grain can be overdone, for it substitutes at a diminishing rate. Data from many feeding experiments were examined so that some of these substitution rates could be established. Here is an example.

In producing 8,500 pounds of 4-percent fat-corrected milk per cow, each added pound of forage substituted for grain in the ration replaced nearly a pound of grain when the quantity of hay fed was stepped up from 6,000 to 6,500 pounds. But in increasing the quantity of hay fed from 9,500 to 10,000 pounds, each added pound of hay replaced only around a third of a pound of grain.

A diminishing rate of replacement was found also in feeding sheep, hogs, and feeder cattle.

Let's jump to another part of the country. Grassland plays an important role in the agriculture of *Pennsylvania*. But how much of it now produces roughage of high quality?

In 1948, permanent pastures produced about 41 percent of all pasture feed on dairy farms in the central part of the State, but only 18 percent of the pastures were rated as good. Rotation pastures, which provided 31 percent of the pasture feed, fared somewhat better, with 27 percent rated as good. The rest of the pasture feed was provided by aftermath of hay and new grass seedings, 22 and 6 percent, respectively.

These pastures did not provide the quantity of pasture feed that could have been effectively utilized by the herd. The critical problem comes in summer. Many of the permanent pastures could be improved by applying lime to correct the soil acidity, and fertilizer and manure to increase the available supply of plant nutrients. The rotation pastures need more legumes in the ground cover.

The quality of the roughage a cow eats has a lot to do with the amount she will consume and with the proportion of the feed nutrients that become available for production of milk. On good pasture, an average cow will eat enough each day to produce 17.5 pounds of 4-percent milk. But on poor pasture she will eat no more than enough to maintain herself. She will eat enough good hay to produce 22.5 pounds of milk but on poor hay she will just maintain herself.

Two plans for adjusting pastures and forage were proposed for a typical farm in Pennsylvania. The first would include adequate pasture during the grazing season and enough good roughage as hay or silage, to combine with the present rate of feeding grain for the present herd of cows. The second would increase the number of cows and would make maximum use of pasture

and roughage. Under both plans, the net cash income would increase.

On a typical *New England* dairy farm, both production and quality of forage could be increased by using more fertilizer, shorter rotations, and more legumes. The increased forage would permit more cows and more milk per cow. This would add up to an increase of about 40 percent more milk per farm. True, expenses would increase, although not as much as receipts and not in proportion to production of milk. Thus the cost of producing milk would be lowered and net farm income would be greater.

Michigan's dairy cow herd numbers nearly a million head. If dairymen used more high-quality roughage, the feed bill for the herd would be lowered by several million dollars each year.

On 6 dairy farms in the south central part of the State, 3 groups of 11 cows each were given all the high-quality hay or legume-grass silage or both that they could eat in 300 days of lactation. The three groups were given different quantities of concentrate per cow. The more concentrate they ate the less roughage they consumed.

Result: The group that got the low-concentrate heavy-roughage ration gave highest returns above cost of feed. Actually, the difference in production of milk among groups was slight.

Some pastures must be irrigated for best results. In northeastern *Colorado* a study is under way on the best way to establish such pastures, how to maintain and manage them, and the returns be expected from them.

After allowing a year to get the pastures going, farmers who cooperated in the study obtained as high as 18 animal unit months of grazing per acre, but the average in 1950 was only 5 animal unit months. To maintain the pastures from 2 to 14 irrigations were made, although the usual number was 4 or 5. Irrigation water applied in 1950 amounted to 30 acre-inches per acre. More frequent irrigations with less water applied would improve the pastures.

Farmers who had more than one pasture practiced rotation grazing. Rest periods are essential for good stands of alfalfa. These, with proper application of commercial fertilizer, keep pastures producing longer.

These Colorado farmers realized an average net return of $30.23 an acre for their irrigated pastures.

Grass Silage Profitable

In *Wisconsin,* farmers have found making and feeding grass silage profitable. Losses in feed value are less when grasses and legumes are put in silos. Less corn is used for silage, therefore more is available as grain for hogs and poultry.

The farmers found that the quality of grass silage depends mainly upon its moisture content. They discovered also that a field chopper takes about half as much time as any other method and does away with the hardest work involved in making silage.

Why has production of grass silage spread so slowly? The answer lies in three bottlenecks: (1) Farmers are uncertain as to "how it will turn out"; (2) it takes labor and money for equipment; and (3) not all have the necessary storage room or can build it.

The results of these studies show that better grass and roughage for most farmers is possible.

Here are the reports of the studies mentioned in this article:

- *Economic Use of Forages in Livestock Production on Corn Belt Farms,* by Russell O. Olson and Earl O. Heady. U. S. Dept. Agr. Cir. 905. July 1952. (Iowa Agr. Expt. Sta. cooperating.)
- *Planning for Profitable Grassland on Dairy Farms in Central Pennsylvania,* by K. H. Myers and R. G. Campbell. Pa. Agr. Expt. Sta. Bull. 545. October 1951. (BAE cooperating.)
- *Production Efficiency on New England Dairy Farms. 1. A Preliminary Appraisal of Cost Reduction Opportunities.* (N. H. Agr. Expt. Stas. and BAE cooperating.) Conn. Agr. Expt. Sta. Bull. 283. Jan. 1952.
- *Reducing Dairy Feed Costs,* by H. S. Wilt and C. R. Hoglund. Mich. Agr. Expt. Sta. Special Bull. 383. October 1952. (BAE cooperating.)
- *Establishing Irrigated Pastures; Maintaining Irrigated Pastures, 1950; Management and Returns of Irrigated Pastures, 1950. Preliminary Progress Reports.* Colo. Agr. Expt. Sta., Ext. Serv., and BAE. (RMA) (Processed.)
- *Farmers Experience With Grass Silage in 1949; How Did the 1950 Grass Silage Crop Turn Out?* By Edward J. Smith. Wis. Agr. Expt. Sta. and BAE. (Processed.)

Esther M. Colvin
Bureau of Agricultural Economics

Our Silage Crops and How They're Harvested

SILAGE was first produced in the United States around 1875. The pioneers used about the same crops for producing silage as are now used. But throughout the years there has been continuous improvement in the machines and methods used for harvesting silage, and in the silos used for storing it. These developments have made it possible to produce and handle silage with less time and with much less physical effort; and these improvements have contributed to the increase in silage production.

Methods of harvesting the different kinds of silage in 1951 with comparisons for earlier years are presented in Statistical Bulletin 128, "Harvesting the Silage Crops," *U. S. Department of Agriculture, Bureau of Agricultural Economics.* This new report gives information on types and capacity of silos; and the number of farms producing silage, by kind of silage produced, and the distribution of these farms according to the tonnage of silage produced per farm in 1951. Much of the statistical material which made the report possible was supplied by the voluntary crop correspondents of the Department of Agriculture.

Corn Silage and Sorghum Silage

From the beginning corn has been the leading plant product used for silage. About 65 percent of the farmers producing silage in 1951 produced only corn silage (*see table*). It was also produced on most farms that had two or more kinds of silage. Of the 53 million tons of silage produced in 1951, more than 38 million tons, or 72 percent, was of corn. Stationary choppers were exclusively used for processing corn silage until about 1920, when the field ensilage harvesters first came into use. The early type harvesters were adapted only for row crops. Because of their limited use, they were considered expensive machines by most farmers. As late as 1943, only 10 percent of the corn silage was harvested with the field ensilage harvester. About 1940, a new type of field forage harvester became available to farmers. Many makes of these machines are now equipped with attachments for harvesting row crops and pickup attachments for handling field-cured hay, grain crops, and wilted grass from the windrow. Some of the machines also have cutter bar attachments for cutting hay and grass crops for silage. The material is chopped in the field and blown into wagons or motortrucks.

Number of Farms Producing Silage, by State Groups, 1951
Also Percentage Distribution by Kinds of Silage

State group	Farms producing silage	Percentage of farms producing					
		Corn silage only	Grass silage only	Sorghum silage only	Other silage only	2 kinds of silage	3 or more kinds of silage
Northeast	106,000	61.4	8.6	------	0.4	28.9	0.7
Corn Belt	91,000	64.3	17.0	2.8	.1	15.6	.2
Lake States	215,000	70.0	7.5	.1	.1	22.2	.1
Great Plains	51,000	52.7	1.8	31.4	.3	13.1	.7
South	27,000	55.5	6.4	24.4	.6	12.2	.9
West	21,000	62.2	19.6	4.9	4.0	9.1	.2
United States	511,000	64.4	9.3	5.2	.4	20.4	.3

Sales of the new type field forage harvesters have been large in recent years. In 1948, about 32 percent of the corn silage was harvested with these machines. By 1951, they were used for harvesting 58 percent of the corn silage.

Sorghum was among the first crops used for silage. For many years it was second to corn silage in importance, but by 1951 more grass silage than sorghum silage was being produced.

About 11 percent of the total silage of 1951 was made from sorghum. Sorghum silage is produced to some extent in many States, but production is concentrated in the central and southern Plains States. Kansas alone in 1951 had almost three-fourths of the total sorghum silage.

In the areas where most of the sorghum silage is produced, farm mechanization is relatively far advanced. In 1951 about 84 percent of our sorghum silage was chopped with field forage harvesters.

Grass Silage

An outstanding development of the last decade is the tremendous increase in production of grass silage. This silage is produced from crops ordinarily used for hay, from small grain crops and from pasture clippings. The new type of harvesting machines and increased power equipment on farms has made it possible to produce and to feed grass silage with but little physical labor.

It is estimated that in 1951, production of grass silage amounted to 8.4 million tons, or about 16 percent of all silage produced. Of this tonnage, about 85 percent was produced in the Lake States, the Corn Belt, and the Northeastern States. Most of the grass silage of the Western States is grown in the humid areas of Washington, Oregon, and California. In the humid areas of the country, farmers have always had to contend with the possibility of loss or damage to the hay crop because of adverse weather at haying time. Such losses are largely avoided by ensiling the grass instead of curing it for hay.

Most of the grass silage is chopped before storing, but some of it is stored without chopping, and some wilted forage is baled and stored as baled silage. In 1951, of the grass silage chopped before storing, about 75 percent was chopped with field forage harvesters.

Reports indicate that, along with the increased production of grass silage, there has been a trend toward the use of trench silos. Silage can be unloaded directly from the wagon or truck into the trench silo, and packed with tractors. Tractor equipment can be used for removing the silage from the silo and transporting it to feed lots. Some trench silos are constructed so as to permit automatic feeding.

With the tractor equipment now available on many farms, trench silos can often be constructed at a relatively low cost. This is an important factor, especially on farms where silage is produced only when weather conditions are such that crops cannot be harvested in the usual manner.

Most farm silos of course are aboveground or tower silos. New type tower silos so constructed that losses in storing are practically eliminated, are increasing in use. Automatic unloading devices, which save much labor in feeding, are used in these silos. Some of these new type tower silos are also used for storing grain crops.

All Other Silage

Silage made from crops or products other than whole field corn, sorghum, and hay crops is called *all other silage.* Most of this silage is made from by-products of canning crops, especially sweet corn and peas. It is also produced from beet tops, beet pulp, soft ear corn, and from some vegetable crops. Only one percent of the *total* silage produced on farms in 1951 was "all other silage." In that year, some farmers in the central and western Corn Belt produced silage from soft ear corn. The ears were usually harvested with the corn picker and crushed or chopped before storing. Practically all the ear-corn silage was fed to cattle. Most of the farmers who produced this silage were satisfied with the results from feeding it.

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Outlook Highlights

(*Continued from page 8*)

the crop materializes, prices at harvest time probably will again be well below the support price.

Wheat

Wheat producers will vote August 14 on whether to use quotas in marketing the 1954 crop. Approval of two-thirds of those voting is required to make quotas effective. Growers with more than 15 acres planted to wheat and with normal production of 200 bushels or more are eligible to vote. The national acreage allotment, on which quotas will be based, is 62 million acres. Wheat prices have risen above levels reached earlier this season in most markets, but remain well below loan levels.

Potatoes and Sweetpotatoes

This year's potato crop will be about 29 million bushels larger than last year's, based on indications July 1. About 12 million of the gain was in early potatoes that have already been marketed. Another 4 million is in the intermediate crop which was small last year. This leaves an increase of 13 million for the late crop.

The sweetpotato crop, up 16 percent from 1952, probably will bring prices moderately below last year's record level.

Cotton

Nearly 10 percent of this year's cotton acreage is in the Western States of California, Arizona, and New Mexico, the highest proportion on record. This increase in these States continues a trend that has existed for many years.

Disappearance during the 1953–54 marketing year is tentatively estimated at about 12.2 to 13.5 million bales compared with 12.7 million bales estimated for 1952–53. Exports of cotton from the United States in 1953–54 are estimated at 3 to 4 million bales, depending on production of competitive foreign growths and the amount of cotton consumed abroad. It now appears that total exports of U. S. cotton in 1952–53 will run close to 3.2 million bales while the August 1 stocks of all cotton on hand will be about 5.2 million bales.

Two New Bulletins on Potatoes

"Farming Alternatives for Potato Growers on the Eastern Shore (Va. & Md.)," Agricultural Information Bulletin No. 102, Strand, Edwin G., *Bureau of Agricultural Economics, U. S. Dept. of Agriculture.*

"Potatoes . . . Acreage, Production, Value, Farm Disposition, January 1 Stocks (1866–1950)," Statistical Bulletin No. 122, Strong, George B., *Bureau of Agricultural Economics, U. S. Dept. of Agriculture.*

Tobacco

A fairly strong domestic demand is in prospect for flue-cured tobacco. Exports are likely to be about the same, or possibly a little larger than last year. The flue-cured crop was estimated on July 1 at 1,320 million pounds, down from last year by about 3 percent but the fourth largest on record.

Wheat Referendum

(*Continued from page 3*)

the total supply of wheat for 1953–54 was indicated at a record 1,717 million bushels, which exceeded the normal supply of 1,156 million bushels by 48 percent. Under the law, wheat quotas had to be proclaimed not later than July 1 because the total supply exceeded the normal supply by more than 20 percent. Since that time, a later crop report boosts the expected 1953 wheat crop to 1,175 million bushels. This crop, together with a carryover of about 580 million bushels and estimated imports of 5 million bushels, raises the total indicated supply to 1,760 million bushels—52 percent above normal.

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Changes in the Production of Potatoes

(*Continued from page 4*)

tato production tended to be concentrated on farms of specialized growers in locations favorable for production of high yields. As high yields are essential to relatively low costs per bushel, growers obtaining low yields for their area have a great disadvantage.

Among the factors that have contributed to increased yields of potatoes in recent years are the availability and use of improved varieties and certified seed, along with closer planting and increased use of commercial fertilizer, green manure, and improved insecticides and fungicides. In some areas, irrigation has been an important factor. Tractor power and adapted equipment have made it possible to improve the timing and effectiveness of operations from seedbed preparation through harvesting, and at the same time to hold down the cost of labor. Growers in favorable areas who have become skilled in potato production have been able to use the new materials, equipment, and techniques to maximum advantage.

During the last two decades the acreage of potatoes was reduced in 41 of the 48 States and production was reduced in 29 States. Most of the States showing decreases in both acreage and production were in the north central, eastern, and southern sections of the country. Large increases in acreage as well

(*Continued on page 16*)

Prices of Farm Products

[Estimates of average prices received by farmers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and State]

Commodity	Average		July 15, 1952	June 15, 1953	July 15, 1953	Effective parity price July 15, 1953 [2]
	Base period price [1]	January 1947–December 1949				
Basic commodities:						
Cotton American upland (pound)---cents	[3] 12.4	31.21	37.02	31.51	31.87	34.22
Wheat (bushel)---dollars	[4] .884	2.14	1.98	1.88	1.87	2.44
Rice (cwt.)---do	1.92	5.38	5.62	6.81	5.92	5.34
Corn (bushel)---do	[4] .642	1.64	1.73	1.46	1.47	1.77
Peanuts (pound)---cents	[4] 4.8	10.2	10.3	11.1	11.1	13.2
Designated nonbasic commodities:						
Potatoes (bushel)---dollars	[5 10] .573	1.60	2.74	1.02	.955	1.59
Butterfat in cream (pound)---cents	26.7	71.2	71.8	65.0	64.8	74.2
All milk, wholesale (100 lb.) [6]---dollars	1.68	4.42	4.59	3.90	[7] 4.06	4.67
Wool (pound)---cents	[5] 21.0	46.0	53.2	55.6	53.9	58.4
Other nonbasic commodities:						
Barley (bushel)---dollars	.488	1.37	1.31	1.16	1.15	1.36
Cottonseed (ton)---do	25.90	71.60	71.00	61.20	59.00	72.00
Flaxseed (bushel)---do	1.62	5.54	3.68	3.33	3.17	4.50
Oats (bushel)---do	.317	.852	.761	.705	.701	.881
Rye (bushel)---do	.605	1.82	1.75	1.28	1.21	1.68
Sorghum, grain (100 lb.)---do	[4] 1.21	2.53	2.69	2.39	2.42	[9] 2.67
Soybeans (bushel)---do	.996	2.84	3.00	2.66	2.44	2.77
Sweetpotatoes (bushel)---do	.964	2.36	4.46	3.98	4.02	2.68
Beef cattle (100 lb.)---do	7.54	20.20	25.60	16.00	17.30	21.00
All chickens (pound)---cents	11.0	29.3	26.4	24.9	26.1	30.6
Eggs (dozen)---do	[4] 21.5	46.6	43.3	45.7	47.7	[9] 47.4
Hogs (100 lb.)---dollars	7.26	21.90	19.70	22.70	24.20	20.20
Lambs (100 lb.)---do	8.19	21.90	25.60	22.00	21.90	22.80
Calves (100 lb.)---do	8.39	22.60	27.80	17.00	17.00	23.30
Oranges, on tree (box)---do	[8] 2.29	1.23	1.20	1.94	.83	[9] 3.28
Apples (bushel)---do	.996	2.39	3.13	3.25	3.11	2.77
Hay, baled (ton)---do	[4] 11.87	22.40	22.00	20.80	20.20	[9] 26.20

[1] Adjusted base period prices 1910–14, based on 120-month average January 1942–December 1951 unless otherwise noted.

[2] Parity prices are computed under the provisions of title III, subtitle A, section 301 (a) of the Agricultural Adjustment Act of 1938 as amended by the Agricultural Acts of 1948 and 1949.

[3] 60-month average, August 1909–July 1914 for all cotton.

[4] 60-month average, August 1909–July 1914.

[5] Adjust base period price 1910–14 derived from 10-season average prices 1943–52.

[6] Prices received by farmers are estimates for the month.

[7] Preliminary.

[8] 10-season average 1919–28.

[9] Transitional parity, 80 percent of parity price computed under formula in use prior to Jan. 1, 1950.

Year and month	Industrial production (1935–39=100)[1]	Total personal income payments (1935–39=100)[2]	Average earnings of factory workers per worker (1910–14=100)	Wholesale prices of all commodities (1910–14=100)[3]	Index numbers of prices paid by farmers (1910–14=100)			Index numbers of prices received by farmers (1910–14=100)			
					Commodities	Wage rates for hired farm labor[4]	Commodities, interest, taxes and wage rates	Livestock and products			
								Dairy products	Poultry and eggs	Meat animals	All livestock
1910–14 average	58	--------	100	100	100	100	100	100	100	100	100
1925–29 average	98	--------	232	143	151	184	161	161	155	145	152
1935–39 average	100	100	199	118	124	121	125	119	108	117	115
1947–49 average	185	294	462	225	240	430	249	275	224	334	291
1950 average	200	330	518	232	246	425	255	247	181	340	278
1951 average	220	370	563	258	271	470	281	284	226	411	335
1952 average	219	[5]393	592	251	273	503	286	302	203	358	307
1952											
July	193	[5]3.88	570	251	273	506	286	286	208	376	312
August	215	[5]3.95	586	252	274	--------	287	295	225	372	316
September	228	[5]4.03	607	251	271	--------	285	307	227	349	309
October	230	[5]4.04	613	250	269	499	282	316	228	328	301
November	234	[5]4.04	613	249	268	--------	281	318	238	310	295
December	235	[5]4.09	628	246	267	--------	280	309	221	291	280
1953											
January	236	409	622	247	267	514	282	296	218	303	281
February	240	409	620	246	264	--------	280	286	206	305	277
March	243	[5]413	627	247	265	--------	281	277	216	301	274
April	241	412	622	246	264	508	279	264	218	299	270
May	[5]241	414	624	247	264	--------	279	257	218	317	277
June	241	--------	628	246	[5]260	--------	[5]276	254	213	299	267
July	--------	--------	--------	--------	261	514	278	261	223	318	280

Year and month	Index numbers of prices received by farmers (1910–14=100)								All crops and livestock	Parity ratio[6]
	Crops									
	Food grains	Feed grains and hay	Tobacco	Cotton	Oil-bearing crops	Fruit	Truck crops	All crops		
1910–14 average	100	100	100	100	100	100	--------	100	100	100
1925–29 average	141	118	169	150	135	146	145	143	148	92
1935–39 average	94	95	172	87	113	95	95	99	107	86
1947–49 average	246	223	384	262	319	195	214	246	270	108
1950 average	224	187	402	280	276	200	185	232	256	100
1951 average	243	220	436	335	339	193	239	264	302	107
1952 average	244	227	432	309	296	195	254	267	288	101
1952										
July	230	227	436	311	307	214	287	276	295	103
August	236	233	436	319	310	206	229	272	295	103
September	240	234	428	329	305	200	182	264	288	101
October	240	219	429	311	304	215	189	260	282	100
November	248	213	412	288	300	195	238	257	277	99
December	247	218	428	268	300	206	256	257	269	96
1953										
January	245	214	419	252	291	208	237	251	267	95
February	240	206	424	255	287	209	237	247	263	94
March	246	208	424	266	291	215	248	253	264	94
April	244	206	424	266	289	226	204	247	259	93
May	242	205	426	268	285	224	182	243	261	94
June	222	198	425	266	280	253	270	251	259	94
July	218	197	426	269	268	207	216	237	259	93

[1] Federal Reserve Board: represents output of mining and manufacturing; monthly data adjusted for seasonal variation.
[2] Computed from reports of the Department of Commerce; monthly data adjusted for seasonal variation.
[3] Bureau of Labor Statistics.
[4] Farm wage rates simple averages of quarterly data, seasonally adjusted. [5] Revised.
[6] Ratio of index of prices received to index of prices paid, interest, taxes, and wage rates. This parity ratio will not necessarily be identical to a weighted average percent of parity for all farm products, largely because parity prices for some products are on a transitional basis.

Changes in the Production of Potatoes

(*Continued from page 14*)

as in production occurred in California and Idaho. Other important areas showing expansion in production are in the Red River Valley of Minnesota and North Dakota, and in Colorado, Washington, and Oregon. In many States the increase in yields was more than enough to offset large decreases in acreage.

Five States Now Produce Over Half the Crop

The concentration of potato production in specialized areas is indicated by the fact that five States—Maine, California, Idaho, New York, and Pennsylvania—accounted for more than half of the entire national production of potatoes in 1948–52. Even more significant in showing the concentration of potato production is the fact that the 10 leading counties in potato acreage in 1949 had 26 percent of the national acreage and accounted for 36 percent of the production that year.

The 10 leading counties in acreage in potatoes in 1949 were: Aroostook, Me.; Kern, Calif.; Suffolk, N. Y.; Walsh, N. Dak.; Bingham, Idaho; Pembina, N. Dak.; Grand Forks, N. Dak.; Bonneville, Idaho; Polk, Minn.; and Rio Grande, Colo. Ranking 11th in acreage was Scotts Bluff County, Nebr.

Evidence that commercial potato production is a large-scale operation is provided by the United States Census which shows that 83 percent of the entire 1949 crop was produced by 2 percent of the growers (30,789 farmers), each of whom grew 10 acres or more.

Only 8 percent of the growers grew 1 to 10 acres each; they produced 11 percent of the national crop. About 90 percent of the growers grew less than an acre each, and most of their production, which was only 6 percent of the total, undoubtedly was for home use.

Less Decline in Early Potatoes

In contrast with the downward trend in acreage of all potatoes since 1935, the acreage of early commercial potatoes showed no definite downward trend until after 1946. During World War II the level of acreage was the highest on record. Early commercial potatoes are produced for harvest in late winter, spring, and summer. In recent years, California has produced more than a third of this early crop. The production of early commercial potatoes has increased relative to the production of all potatoes, accounting for 17 percent of all potato production in 1948–52 compared with 11 percent in 1928–32.

The mineral and vitamin contents of potatoes are higher than is generally recognized, and, contrary to popular notion, potatoes are not particularly fattening. As these facts become more widely known, the per capita consumption of potatoes may cease to decline. The volume of potatoes used as Potato Chips and as French Fries has been expanding, and this trend may continue. Nevertheless, market supplies of potatoes are likely to be relatively plentiful for some time and, consequently, the watchword for producers will be *high yields at relatively low cost.*

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UNITED STATES
DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS
WASHINGTON 25, D. C.
OFFICIAL BUSINESS

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U. S. GOVERNMENT PRINTING OFFICE: 1953